200400110

### THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE; PRESENTS; SHAVIL COME;

Anidersity of Georgin Research Joundation, Inc. (HGARI) & Florida Agricultural Experiment Station (HAES)

Therens, there has been presented to the

### Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE SIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, TITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT GATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIR RIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT.)

WHEAT, COMMON

'USG 3592'

In Testiment Macrest, I have hereunto set my hand and caused the seal of the Plant Barista Francism Office to be affixed at the City of Washington, D.C. this fourteenth day of June, in the year two thousand and four.

Attest

Commissioner

Diant Variety Protection Office Agricultural Marketing Service Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

(Instructions and information o	ARIETY PROTECTION CERTIFICATE offection burden statement on reverse)	Application is required in order to determ (7 U.S.C. 2421). Information is held con	nine if a plant variety protection certificate is to be issued offidential until certificate is issued (7 U.S.C. 2426).
1. NAME OF OWNER University of Georgia	Research Foundation, Inc	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME
(UGARF)& Florida Agricu	ltural Experiment Station (FAES)	GA931241E16	USG 3592
4. ADDRESS (Street and No., or R.F.D. No., City	, State, and ZIP Code, and Country)	5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY
Boyd Graduate Studies 6th Floor	Research Center	(706)542-5944	PVPO NUMBER
D.W. Brooks Drive	·	6. FAX (include area code)	200400110
Athens, GA 30602-7411	;	(706)542-3837	FILING DATE
<ol> <li>IF THE OWNER NAMED IS NOT A "PERSON" ORGANIZATION (corporation, partnership, ass</li> </ol>	GIVE FORM OF 8. IF INCORPORATED, GIVE ociation, etc.) STATE OF INCORPORATION	9. DATE OF INCORPORATION	
Corporation (UGARF) an		November 17, 1978	Feb. 18, 2004
10. NAME AND ADDRESS OF OWNER REPRES	ENTATIVE(S) TO SERVE IN THIS APPLICATION. (First pe	erson listed will receive all papers)	F FILING AND EXAMINATION FEES:
and Florida Acrievity	a Research Foundation, Inc	· .	€   3652.©
c/o Dr. John Ingle	ural and Experiment Statio	ons	R DATE 2/18/2004
	s Research Center, 6th Flo	nor l	C CERTIFICATION FEE: 00
Athens, GA 30602-741.	l	,01	₹   · <b>4</b> 32
			D DATE 5-12-04
11. TELEPHONE (Include area code)	12. FAX (Include area code)	13. E-MAIL	
(706) 542–5944	(706) 542–3837	kmb@ovpr.uga.ed	lu
14. CROP KIND (Common Name)	16. FAMILY NAME (Botanical)		ANY TRANSGENES? (OPTIONAL)
Wheat (common)	Triticum aestivum	YES X NO	
16 CENTIS AND SPECIES NAME OF SPACE			

	(704) 510 5011	12. FAX (Include area code)	13. E-MAIL
_	(706) 542–5944	(706) 542–3837	kmb@ovpr.uga.edu
	14. CROP KIND (Common Name)	16. FAMILY NAME (Botanical)	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL)
_	Wheat (common)	Triticum aestivum	YES X NO
	15. GENUS AND SPECIES NAME OF CROP	17. IS THE VARIETY A FIRST GENERATION HYBRID?	IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE
	Gramineae	YES NO	APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION.
	CHECK APPROPRIATE BOX FOR EACH ATTA     (Follow instructions on reverse)		DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(e) of the Plant Variety Protection Act)
	a. X Exhibit A. Origin and Breeding History	of the Variety	YES (If "yes", enswer items 21 and 22 below) XX NO (If "no", go to item 23)
	b. Exhibit B. Statement of Distinctness		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
	c. 💹 Exhibit C. Objective Description of Vari	ety	│ ☐ YES ☐ NO
	d. K Exhibit D. Additional Description of the	Variety (Optional)	IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
	e. Exhibit E. Statement of the Basis of the		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
	f. Voucher Sample (2,500 viable untreate verification that tissue culture will be de repository)	d seeds or, for tuber propagated varieties, posited and maintained in an approved public	YES NO
			IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
	g. K Filing and Examination Fee (\$3,652), m States" (Mail to the Plant Variety Protect	ade payable to "Treasurer of the United lion Office)	☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
	22 HAR THE VARIETY (INCLUDING ANY INCLUDING		(If additional explanation is necessary, please use the space indicated on the reverse.)
-	23. HAS THE VARIETY (INCLUDING ANY HARVES FROM THIS VARIETY BEEN SOLD, DISPOSED OTHER COUNTRIES?	TED MATERIAL) OR A HYBRID PRODUCED OF, TRANSFERRED, OR USED IN THE U.S. OR	24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)?
	YES X NO		YES , X NO
	IF YES, YOU MUST PROVIDE THE DATE OF F FOR EACH COUNTRY AND THE CIRCUMSTAI	IRST SALE, DISPOSITION, TRANSFER, OR USE NCES. (Please use space indicated on reverse.)	IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 600 AND L.	Patil	SIGNATURE OF OWNER		
NAME (Flease phili of type)		NAME (Please print or type)		
Dr. Gordhan L. Patel				
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE	
Executive Vice President	2-11-04	J. T. S. TILLE	DATE	
		<u></u>		

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#### UNSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filling fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office Telephone: (301) 504-5518 FAX: (301) 504-5291

Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 http://www.ams.usda.gov/lsg/seed.htm.

#### ITEM

19a, Give:

- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
- (2) the details of subsequent stages of selection and multiplication;
- (3) evidence of uniformity and stability; and
- (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
  - (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- 20. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
- 23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- 24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.
- 22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)
- 23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)
- 24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

#### Exhibit A

### Origin and Breeding History of USG3592

'USG 3592'(GA931241E16) winter wheat (Triticum aestivum L.), was cooperatively developed and released by the Georgia and Florida Agricultural Experiment Stations in 2003. USG 3592 was derived from a single cross, Coker 9134/GA881502. The pedigree of Coker 9134 is Coker 797/Saluda; the pedigree of GA881502 is SWM6525/GA821264//GA801468; SWM6525 is a CIMMYT line that has good Hessian fly resistance; the pedigree of GA821264 is McNair 3271/FL 301//McNair 1003/Coker 916; and the pedigree of GA801468 is Coker 762/GA74-19-1-1.

The cross of USG 3592 was made in the spring of 1993. The F1 was grown during the spring of 1994. The population was advanced from the F2 through F5 generations using the pedigree method of breeding with individual spikes selected for resistance to leaf rust (caused by Puccinia recondita (Roberge ex Desmaz), powdery mildew (caused by Erysiphe graminis DC. f. sp. tritici Em. Marchal), and septoria nodorum blotch (caused by Stagonospora nodorum (Berk) Castellani & E.G. Germano). Spikes were harvested, threshed individually and planted in single 1 meter headrows and were advanced to the next generation during the F2:3-, F3:4-, and F4:5-derived lines at Plains, GA. USG 3592 is the F5:derived head row selected and advanced to Breeder Seed which was produced in the F10 generation.

USG 3592 was evaluated as GA931241E16 for agronomic performance in nursery plots in 1999, GA-FL state trials at five locations from 2001 to 2003, and in the Uniform Southern Soft Red Winter Wheat Nursery at 30 locations in 2002 and 2003.

An increase strip of USG 3592 was planted in 2001 from a small increase plot and was rogued thoroughly for aberrant types. Seeds from this increase strip was planted in an increase block (2 acres) of USG 3592 in 2002 at the Foundation Seed Farm and rogued to remove variants. Seed from this large block was used for Breeder Seed for USG 3592 in 2003. USG 3592 has been observed for 3 generations of reproduction and during seed increase period and is stable and uniform. The variant consists of less than 1% awned types, 2/10,000 of taller types, and 1/10,000 late types.

This Breeder seed of USG 3592 was provided to the Georgia Seed Development Commission and will be the source of future seed multiplications. Breeder seed of USG 3592 will be maintained by the Georgia Agricultural Experiment Station, University of Georgia, Georgia Station, Griffin, GA 30223-1797.

Exhibit B

### Novelty Statement

USG 3592 is a soft red winter wheat, awnless, and white chaffed. USG 3592 is most similar in appearance to 'Coker 9134'; however, USG 3592 has a white coleoptile and the absent of seedling anthocyanin whereas Coker 9134 has a purple coleoptile and the present of seedling anthocyanin.

### U.S. DEPARTMENT OF AGRICULTURE

### AGRICULTURAL MARKETING SERVICE SCIENCE DIVISION BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY WHEAT (Triticum spp.)

NAME OF APPLICANT(S)	FOR OFFICAL USE ONLY
University of Georgia Research Foundation, Inc. & Florida Agricultural Exp. Stns. (FAES)	PVPO NUMBER
ADDRESS (Street No. or R.F.D. No. City, state, and Zip Code) Boyd Graduate Studies Bldg.	
University of Georgia Athens, GA 30602	VARIETY NAME USG 3592
	TEMPORARY OR EXPERIMENTAL
	DESIGNATION
PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal ch in the boxes below. Place a zero in the first box (e.g. or ) when number is either 99 or less 9 or less respect	aracter of this variety
quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined	from variation antoned
in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant color	s; designate system used:
Please answer all questions for your variety; lack of response may delay progress of your application.  1. KIND:	
1 = Common $2 = Durum$ $3 = Club$ $4 = Other (SPECIFY)$	
2. VERNALIZATION:	
$2 = Winter \qquad 3 = Other (SPECIFY)$	
3. COLEOPTILE ANTHOCYANIN:	
1   I = Absent   2 = Present	
4. JUVENILE PLANT GROWTH:	<u></u>
2 = Prostrate   2 = Semi-erect  3 = Erect	
5. PLANT COLOR (boot stage):	
1 = Yellow - Green $2 = Green$ $3 = Blue - Green$	
6. FLAG LEAF (boot stage):  1	
1 $l = Erect$	2 = Twisted
d. Dan Harponion	
7. EAR EMERGENCE:  0 2 Number of Days Earlier Than Pat	
0 2 Number of Days Earlier Than Pat	
Number of Days Lat AGS 2000	
8. ANTHER COLOR:	
1 = YELLOW 2 = PURPLE	N.
;	
PLANT HEIGHT (from soil to top of head, excluding awns):	<del>-</del>
0 1 cm Taller Than AGS 2000	·
cm Shorter Than Coker 9663	
COACI 7003	

A ANTHOCYANIN  1 1 = Absent 2 = Present  8. WAXY BLOOM 1 1 1 = Absent 2 = Present  C. HAIRINESS (tast internode of rachis) 1 1 = Hollow 2 = Semi-solid  B. INTERNODE (SPECIFY NUMBER) 1 1 = Hollow 2 = Semi-solid  E. PEDUNCLE 2 1 = Absent 2 = Present 20 cm Length  11. HEAD (at Maturity) A DENSITY 2 1 = Lax 2 = Middense 3 = Dense B. SHAPE 2 1 = Tapering 2 = Strap 3 = Clavate 4 = Other (SPECIFY)  C. CURVATURE 1 1 = Erect 2 = Inclined 3 = Recurved D. AWNIEDNESS 2 1 = Awnies 2 = Apically Awnletted 3 = Awnletted 4 = Awned  12. GLUMES (at Maturity) A COLOR 1 1 = White 2 = Tan 3 = Other (SPECIFY)  B. SHOULDER 2 1 = Wanting 2 = Oblique 3 = Rounded 4 = Awned 5 = Elevated 6 = Apiculate  C. GEAK 2 1 = Obluse 2 = Acute 3 = Acuminate D. LENGTH 2 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm) E. WIDTH 3 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm 3 = Wide (ca. 4mm)  3. SEED  A SHAPE 2 1 = Ovate 2 = Oval 3 = Elliptical  B. CHEEK 1 1 = Founded 2 = Angular C. BRUSH 1 1 = Not Collared 2 = Collared D. CREASE 2 1 = Width Sol's or less of Kernel 3 = Width Nearly as Wide as Kernel	10. S	TEM:					
1   1 = Absent			THOCYANIN				
B. WAXY BLOOM    1   a Absent   2 = Present				2 = Present			
1 = Absent		Ŀ		2 11000111			
C. HARINESS (last internode of rachis)  1		B. WA	XY BLOOM				
C. HARINESS (last internode of rachis)  1		1	7 1 = Absent	2 = Present			
1							
1		C. HA	IRINESS (last internode	of rachis)			
1 = Hollow							
1 = Hollow		<u>L</u>	_				
E. PEDUNCLE  2		D. INT					•
2		1	1 = Hollow	2 = Semi-solid	3 = Solid		
2			J				
11. HEAD (at Maturity)   A. DENSITY   2   1 = Lax   2 = Middense   3 = Dense     B. SHAPE   2   1 = Tapering   2 = Strap   3 = Clavate   4 = Other (SPECIFY)		E. PEI	DUNCLE				
11. HEAD (at Maturity) A DENSITY  2		2	1 = Absent	2 = Present			
11. HEAD (at Maturity) A DENSITY  2		<u> </u>					•
A. DENSITY  2		20	cm Length				
A. DENSITY  2	44 715	<u> </u>					
2	11. HE			·			
B. SHAPE  2 1 = Tapering 2 = Strap 3 = Clavate 4 = Other (SPECIFY)  C. CURVATURE  1 1 = Erect 2 = Inclined 3 = Recurved  D. AWNEDNESS 2 1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned  12. GLUMES (at Maturity)  A. COLOR  1 1 = White 2 = Tan 3 = Other (SPECIFY)  B. SHOULDER 2 1 = Wanting 2 = Oblique 3 = Rounded 4 = Awned 5 = Elevated 6 = Apiculate  C. BEAK 2 1 = Obtuse 2 = Acute 3 = Acuminate  D. LENGTH 2 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm)  E. WIDTH 3 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm 3 = Wide (ca. 4mm)  3. SEED  A. SHAPE 2 1 = Ovate 2 = Oval 3 = Elliptical  B. CHEEK 1 1 = Rounded 2 = Angular  C. BRUSH 1 1 = Short 2 = Medium 3 = Long 1 1 = Not Collared 2 = Collared  D. CREASE 2 1 = Width 60% or less of Kernel 1 = Width 80% or less of Kernel							
2		2	1 = Lax	2 = Middense	3 = Dense		
2							
C. CURVATURE  1 1 = Erect							
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2			IPD I GOO				
12. GLUMES (at Maturity)   A. COLOR							
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13.	SEED: (continued)				
	E. COLOR 1 = White 2 =	Amber	2 m Dod	4 - Other (ODEOLE) ()	
	)	Aimper	3 = Red	4 = Other (SPECIFY)	<del></del>
	F. TEXTURE				
	2 1 = Hard 2 =	Soft			
	G. PHENOL REACTION (see Instru-	ctions):			
		Fawn	3 = Light Bro	wn 4 = Dark Brown 5 = Black	
14. I	DISEASE: (0 = Not Tested; 1 - Suscep	tible; 2 - Re	esistant; 3 - Interme	ediate; 4 - Tolerant)	
	PLEASE INDICATE THE SP	ECIFIC RAC	E OR STRAIN TEST	ED	
	Stem Rust ( <i>Puccinia graminis</i> f. sp.	fulfici \	Loof Dunt (Du	and the same and the same at the same at	
	1 sp.	unuci)	Lear Rust (Pu	ccinia recondita f. sp. tritici)	
	TTT, TPMK, RTQQ, QTH		[2]	MBDS, PMML LBBK, KDGJ CBGJ, TLGJ, SCJD	
	Stripe Rust ( Puccinia striiformis)		Loose Smut (	Ustilago tritici)	
	[3]			counage unacry	
	Field		<u> </u>		
	Tan Spot (Pyrenophora tritici-repen	tis)	Flag Smut ( <i>Ur</i>	ocystis agropyri)	
	Halo Spot (Selenophoma donacis)		Common Bun	t (Tilletia tritici or T. laevis)	
				c (Through Grand or T. Idevis)	
	Septoria nodorum (Glume Blotch)		Dwarf Bunt (T	illetia controversa)	
				,	
	Septoria avenae (Speckled Leaf Dise	ease)	Karnal Bunt (1	illetia indica)	
		•			
	Septoria tritici (Speckled Leaf Blotch	1)	Powdery Milde	w (Erysiphegraminis f. sp. tritic	i)
			[1]	,	
	Scab (Fusarium spp.)		"Snow Molds"	Field	
	"Black Point" (Kernel Smudge)				
	Mack Folite (Kernel Shindge)		Common Root	Rot (Fusarium , Cochliobolus a	nd <i>Bipolaris</i> spp.
	L_,J				
	Barley Yellow Dwarf Virus (BYDV)		Rhizoctonia Ro	oot Rot (Rhizoctonia solani)	
	. 🗍			,	
	Coilborne Magain Vivor (CDID)		L		
	Soilborne Mosaic Virus (SBMV)		Black Chaff (Xa	anthomonas campestris pv. tran	slucens)
	Field				
	Wheat Yellow (Spindle Streak) Mosaid	c Virus	Bacterial Leaf I	Blight (Pseudomonas syringae p	v evringse)
	·			-ng.n. (r ooudomende dyrmgae p	v. Symigae j
	100 and 100 an		الــا		
	Wheat Streak Mosaic Virus (WSMV)		Other (SPECIF	()	
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			Other (SPECIF)	•	
	<u></u>				

Hessian Fly (Mayetiola destructor)	Other (SPECIFY)
E	
Stem Sawfly ( Cephus spp. )	Other (SPECIFY)
Cereal Leaf Beetle ( <i>Oulema melanopa</i> )	Other (SPECIFY)
Russian Aphid ( <i>Diuraphis noxia</i> )	Other (SPECIFY)
Greenbug (Schizaphis graminum )	Other (SPECIFY)
Aphids 0	Other (SPECIFY)
ADDITIONAL INFORMATION ON ANY ITEM ABOVE,	OR GENERAL COMMENTS:
LEAF RUST MIXED REACTION TO TNRJ	
HESSIAN FLY SUSCEPTIBLE TO BIOTYPES B.C,D & L	

#### Exhibit D

#### Additional Description of USG 3592

USG 3592 is a common soft red winter wheat, *Triticum aestivum* L. bred and developed by the University of Georgia, Georgia Agricultural Experiment Stations and developed jointly by Jerry W. Johnson and Ron D. Barnett with the University of Florida, Florida Agricultural Experimental Station.

USG 3592 is a medium maturing, high yielding, excellent test weight, awnless wheat with resistance to current races of leaf rust, <u>Puccinia recondita</u> (Roberge ex Desmaz) and resistant to predominant biotype E and susceptible to biotypes (biotype B, C, D, L) of Hessian flies, (<u>Mayetiola destructor</u> (Say), and susceptible to powdery mildew, (<u>Erysiphe graminis DC</u>. f. sp. <u>tritici Em</u>. Marchal) in Georgia. USG 3592 is resistant to leaf rust races, MBDS, PMML, LBBK, KDGJ, CBGJ, TLGJ, and SCJD and mixed reaction to TNRJ.

Milling and baking quality characteristics of USG 3592 are rated as acceptable for soft red winter wheat use by the USDA-Soft Wheat Quality Laboratory, Wooster, OH. Information on the milling and baking quality characteristics is also included in a quality report. Additional information is presented in attachment to the Exhibit.

### **ATTACHMENT I**

## APPLICATION FOR APPROVAL OF CULTIVARS $\underline{\mathbf{X}}$ ASSOCIATE CULTIVARS

(Please check appropriate type of application)

- 1. Crop: Wheat
- 2. Experimental no. or name: 931241E16
- 3. Pedigree and history: Coker 9134/GA881502 (SWM6525/GA821264//GA801468). The final cross was made in the spring of 1993. Individual spike selections were made in the F2 to F5 generations at Griffin, GA. The pedigree method of breeding was used to advance the segregating populations. In 1998, a headrow was harvested for preliminary evaluations. Agronomic evaluations were conducted from 2001 to 2002 in the Small Grain State Performance trials for Georgia. It was evaluated in 2002 in the Uniform Southern Wheat Nursery.
- 4. Description: 931241E16 is a medium maturing, white chaffed, medium-tall height line. It matures on average 2 days later than AGS 2000 in Georgia. It is resistant to currently predominant races of leaf rust and biotypes of Hessian fly in Georgia and moderately resistant to races of powdery mildew. It is resistant to soil-borne mosaic virus.
- 5. Station(s) where developed: Griffin Campus
- 6. Participating scientist(s): Jerry Johnson, Barry Cunfer, G. David Buntin, and Dan Bland
- 7. In what respect is the new cultivar superior to the cultivar now in use? <u>or</u> reasons for proposing release as an associate cultivar.

GA931241E16 was approved by the Small Grain Commodity Committee for release. This cultivar will be released as a Associate Cultivar. GA931241E16 is a high-yielding (Tables 1,3,4), medium maturing and good test weight (Tables 2,5) cultivar.

It is equal to AGS 2000 and PIO 26R61 in grain yield (Tables 1,3,4).

It is equal to AGS 2000 in test weight (Table 2, 5).

It has better stripe rust (Table 9) and soil-borne mosaic resistance than AGS 2000 (Tables 6, 9).

In regional trials, GA931241E16 performed equal to AGS 2000 for grain yield at all 30 locations (Table 7) and within the Mid-South and Atlantic Coast region at 11 locations in 2002 (Table 8). It ranked 2th out of 40 entries in the 2002 regional trial at all locations.

Because of its yielding ability and soil-borne mosaic virus resistance, it will be marketing in the Mid-South and Mid-Atlantic region.

- 8. Method of propagation: Seed
- 9. Amount of breeder seed stocks available (if applicable): 40 bu.
- 10. Amount of foundation seed stocks available (if applicable): 2000 bushel in summer of 2003.
- 11. Amount of cutting or bud material available for vegetatively propagated material for nursery distribution (if applicable):
- 12. Is there likely to be unusual difficulty encountered in the production of any class of seed stocks? Explain. No
- 13. Three suggested names for the cultivar: GA931241E16
- 14. Name approved by plant cultivar and germplasm release committee: GA931241E16
- 15. Form of intellectual property protection: Plant Variety Protection
- 16. Is a royalty assessment recommended: X Yes No

### **RECOMMENDED BY:**

A. <u>fluyb fohnson</u> Originating scientist

Assistant Dean

B. Department Head

D. Chairperson, GAES Plant Cultivar and Germplasm Release Committee

E. Associate Dean for Research

APPROVED:

Dean and Director

College of Agricultural & Environmental Sciences

Table 1. Average yield (Bu/A) performance of 931241E16 and check cultivars in Elite Wheat Trials 2000.

Location						
Entry	Griffin	Plains	Calhoun	Midville	Average	
931241E16	95	113	82	102	98a	
AGS 2000	98	116	83	107	101a	

Table 2. Performance of 931241E16 and check cultivars in Elite Wheat Trials at Plains, 2000.

	Test Wt.	Date	Height
Entry	(lbs/bu)	Headed	(in)
931241E16	61.0a	3/31	38
AGS 2000	60.2a	3/26	38

Table 3. Average Yield Performance of 931241E16 and check cultivars in Georgia Performance Trials for 2-Yr Average (2001-2002).

Entry	South	North	State	
931241E16	71.6a	60.4a	67.1a	
AGS 2000	71.4a	64.7a	68.7a	
PIO 26R61	72.2a	63.6a	68.7a	

Table 4. Average yield (Bu/A) performance of 931241E16 and check cultivars in Georgia Performance Trials at five locations 2-Yr (2001-2002).

			Locati	on				
Entry	Tifton	Plains	Midville	South	Griffin	Calhe	oun Nort	h Average
931241E16	79.4	73.8	62.5	71.6a	87.0	34.1	60.4a	67.1a
AGS 2000	77.3	69.9	67.0	71.4a	81.3	48.1	64.7a	68.7a
PIO26R61	76.9	75.0	64.6	72.2a	85.5	41.6	63.6a	68.7a

Table 5. Performance of 931241E16 and check cultivars in State Performance Trials for 2-Yr average (2001-2002).

	Test Wt.	Date	Height
Entry	(lbs/bu)	Headed	(in)
931241E16	55.5a	4/7	41
AGS 2000	54.8a	4/5	39
PIO26R61	55.6a	4/7	39

Table 6. Average performance of 931241E16 and check cultivars in State Performance Trials for 2002.

	Leaf	Hessian		
Entry	Rust %	Fly %	Virus* 0-9	
931241E16	30b	2.2a	1c	
AGS 2000	10c	12.2a	9a	
PIO 26R61	80a	· 0.0a	5b	

<sup>\*</sup>Soil-borne mosaic, 0 resistant and 9 susceptible

Table 7. Average performance of 931241E16 and check cultivars in the Uniform Southern Soft Red Winter Wheat Nursery (30 Locations\*), 2002.

	Yiel	d, bu/a	Test Wt	Date	Height	Lodging	·	
Entry		_	Lbs/Bu	Headed	inches	0-9		
AND TONKS	. 45				- ২০ ক্র	Mit Artista Commission (Commission Commission Commissio		
931241E16	63	62	58.1	117	36	2.7		
AGS 2000	62	61	57.2	114	34	2.6		
P 26R61	57	56	58.9	115	35	1.6		

<sup>\*</sup> States and (Number of Locations) tested: Arkansas (3), Florida (2), Georgia (2), Kansas (2), Kentucky (1), Louisiana (1), Maryland (1), Mississippi (1), Tennessee (1), Texas (2), Virginia (2).

Table 8. Average performance of 931241E16 and check cultivars in the Uniform Southern Soft Red Winter Wheat Nursery in Mid-South and Mid-Atlantic at 11 Locations, 2002.

					Yie	ld, B	u/A								
Entry	K	D	$\mathbf{AL}$	KY	MS	TN	ОН	LA	$\mathbf{SC}$	VA	DE	Average			
931241E16	65	67	61	62	63	42	71	77	63	102	85	68.9		 	
AGS 2000	65	71	52	62	72	36	66	79	58	94	79	66.7			
P 26R61	61	73	50	57	65	34	62	<b>70</b> .	55	82	63	61.0			
LSD (5%)	11	9	9	11	11	12	9	9	8	7	7	6.8			
											•		٠.	 ٠.	

K= Keiser, AR

D= DeWitt, AR

Table 9. Performance of 931241E16 and check cultivars in Uniform Southern Wheat Performance Trials for 2002.

		pe Rust %	Viruses* 0-9
Entry	AR	WA	AR
931241E16	5b	20b	3.7b
AGS 2000	37a	60a	7.0a
PIO 26R61	0b	0b	0.0c

<sup>\*</sup>Soil-borne mosaic, 0 resistant and 9 susceptible

### YIELD (bu/acre)

	TILLD (Duracie)											
		<b>ENTRY MEANS</b>	<b>ENTRY MEANS</b>	<b>ENTRY MEANS</b>								
	·	ALL LOCATIONS	IN-REGION	CV <10%								
		ALL EOUATIONS	1	<u>:</u>								
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P. Common	3 USG 3209	68,5 14	66.9	76.2 14								
•	4 Pioneer 26R61	<b>67.6</b> 17	<b>64</b> .3 24	<b>76.4</b> 13								
2007	5 SC 960057	58.8 37	55.9 37	<b>66.9</b> 37								
i	6 G/F 931241E16	69.2 11	<ul> <li>Secretarian de la completación de la constantación de</li></ul>									
3	7- G/F 93052E42	THE PERSON AND PROPERTY OF PROPERTY OF THE PRO										
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	10 AR 910-9-1	<b>70.5</b> 6	<b>67.5</b> 7									
	11 NC 98-26143	64.5 32	61.4 34	68.5 35								
-3,2	12 NC 99-13022	66.6 25	64.4 22									
	13 NC 98-24182	67.1 21	64.7 21	74.7 22								
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3	CALABATA TORREST DESCRIPTION DESCRIPTION DESCRIPTION AND ADMINISTRATION OF THE PROPERTY OF THE	Manager Manager to the contract of the contract of the contract of the second of the contract		80.2 3								
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100	16 VAN98W-342	67.2 20	CONTRACTOR CONTRACTOR OF THE C	70.6 32								
	17 VA98W-631	72.5	69.3	80.2 2								
	18 LA 9330D11-1	<b>65.2</b> 29	63.7 28	70.4 33								
	19 LA 9560CA22-1	72.1 4	69.4 2	77.6 7								
340	20 AW D99-5261	<b>70.3</b> 7	66.6 11	80.5 1								
2	21 AW L96*9266-1	71.1 5		79.0 4								
8	22 AW D99*5725	to receive the control of the contro	remain a restriction of the rest	mountaines and the control of the state of t								
M	THE STREET AND ADDRESS OF THE PROPERTY OF THE	68.2 16	66.6 12	75.8 15								
ě	23 AW M96*3978-4	65.7 × 28	63.1 30	75.0 21								
	24 AR 93035-4-1	68.5 15	66.0 15	77.3 10								
2	25 G/F 94261E7	66.3 271	65.0 rei	77.4 9								
	26 G 96195	<b>64.5</b> 33	62.3 32	74.3 24								
	.27 G 96226	68.9 13	65.8 - 17	75.1 19								
EAR)	28 G 19844	an i a si surtinata e a ci a masti National September de l'actual de la particular de l'actual de l'actual de l	64.9 20									
经	29 F/G 931630E48											
	The state of the s	entrate en estant com estante en en estant estant al proprieta de la proprieta de la proprieta de la proprieta	62.7 31	73.5 25								
7-512-0	DATE PARTY DE LA CONTRACTOR DE LA CONTRA	62.5 35	59.1 35	67.9 36								
	31 SC 980890	59,9 36	57.9 36	70.1 34								
	32 B 980582	73.1	68.5 4	<b>78.8</b> 5								
	33 B 980696	66.6 24	63:8 27	75.7 16								
	34 B 980954	69.9 9	66,6 9	<b>75.3</b> 17								
	35 B 980416	69.0 12	65.9 16	<b>73.2</b> 26								
	36 MD 71-5	n den de person en en determination de management de la contraction de la contraction de la contraction de la c	ent an executivativa del material di est stratta de la propieta de la propieta de la companya de la companya d	CONTRACTOR CONTRACTOR CONTRACTOR IN THE PROPERTY OF THE CONTRACTOR								
	\$76.1TX 00D1626	to the affect of the state of the contract of the state o	64.0 25	70.8 31								
	EASTANGED TO TO	66.6 22	63.9 26	72.7 27								
	OCATION MEANS											
	SD (.05)											
	\$7.96°											
	<b>2</b> 26		**************************************									
			.,									
	arvest Plot Size (sq.ft.)			,								
327		-	· · · · · · · · · · · · · · · · · · ·	•								

### TEST WEIGHT (lbs/bu)

	Prosper TX	Blacksburg VA	Warsaw VA	ENTRY MEANS ALL LOCATIONS
n cala occa	EC 0	EO E	57.2	rank FG 2 M
1 Coker 9663 2 AGS 2000	56.9 56.9	53,5 51.0	<i>31.∠</i> 58.0	56.3 14 56.2 17
3 USG 3209	58.4	45.0	54.2	54.8 29
4 Pioneer 26R61	60.0	50.2	60.0	56.8 9
5 SC 960057	49.6	43.9	51.9	50.9
6 G/F 931241E16	58.6	51.1	59.6	<b>56.2</b> 16
7 G/F 93052E42	58.6	52:6.	59.3	552 27
8 F/G 931470E62	60.0	48.3	58.7	<b>56.7</b> 10
9 F/G 931233E17	59.2	100 <b>51/2</b>	59.5	i56,4 13
10 AR 910-9-1	57.9	51.5	57.0	55.8
11 NC 98-26143	53.3	45.6	55.7	52.9
12 NC 99-13022	57.0	49.5	57.2	<b>54.6</b> 31
13 NC 98-24182	58.6	54.3	59.7	57.3
14 VA 00W-526	58.7	52.3	57.5	<b>56.5</b> 12
15 VA 98W-335	56.9	52.8	58.2	55.5
16 VAN98W-342 17 VA98W-631	56.8	53.1	59.0 56.4	55.3 25
17 VA98W-631 18 LA 9330D11-1	56.1 58.8	49,1 54.8	59.3	53;2 35 57.0 7
19 LA 9560CA22-1	59.1	54.0 56.3	59.5 60.9	57.0 7 258.2 1
20 AW D99-5261	55.0	47.1	53.9	53.3 34
21 AW L96*9266-1	58.2	51.0	58.3	56.6 11
22 AW D99*5725	<b>5</b> 7.6	49.8	55.0	54.8 28
23 AW:M96*3978-4	56.1	48.5	56.5	55.5 21
24 AR 93035-4-1	59.4	49.3	58.5	56.3 15
.25 G/F 94261E7	58.4	51,0	57.8	
26 G 96195	57.0	45.7	53.0	54.4 32
427. G-96226	158.4	/ 54:0 · · ·	. 58.2	56.9
28 G 19844	57.5	52.4	59.0	57.4 4
29 F/G 931630E48	59.3	52.4	58.5	57.1
30 MO 002001	56.6	51.0	58.3	56.1
31 SC 980890	57.2	47.4	56.6	54.4 33
32 B 980582	58.3	55.8	50.5	57.8 2
33 B 980696	59.4	54.7	60.1	<b>57.7</b> 3
34 B 980954	55.4	53.2	57.8	55.4 23
35 B 980416	56.7	52,1	56.4	55.6 20
36 MD 71-5	56.2	51.6	58.1	<b>54.7</b> 30
37 TX 00D1626	57:8	50.7	57.0	55.3 26
LOCATION MEANS	57.5	50.9	57.4	

### **HEADING DATE (Julian)**

## ENTRY MEANS ALL LOCATIONS

		, , , , , , , , , , , , , , , , , , , ,	rank
1	Coker 9663	117.6	21
2	AGS 2000	116.6	12
3	USG 3209	116.0	8
4	Pioneer 26R61	117.0	15
. 5	SC 960057	121.2	
6	G/F 931241E16	118.4	27
7	G/F 93052E42	114.7	- 3
8	F/G 931470E62	115.6	7
9.	F/G 931238E17	1167	13
10	AR 910-9-1	117.0	14
12	NC 98-26143	119.4	33
SCIENCES STREET	NC 99-13022 NC 98-24182	117.3 115.6	18
14	VA 00W-526	118.0	24
15	CONTRACTOR	119.4	24
16	VAN98W-342	117.4	34 20
17	NEKANTEET MAKATAMAN TERMINI SETEMINI SETEMINI SANTAN TERMINI SANTAN TERMINI MAKATAMAN TERMINI SANTAN SANTAN SE	118.1	25
18	LA 9330D11-1	114.9	4
19	LA 9560CA22-1	117.7	- 22
20	AW D99-5261	119.1	31
21	AW L96*9266-1	117:1	17
22	AW D99*5725	116.5	11
23	-AW M96*3978-4	117.7	23
24	AR 93035-4-1	119.0	30
25	G/E 94261 E7	e e i 116.3	10
26	G 96195	119.0	29
27	G 96226	117.0	16
28	G 19844	121.4	37
HENCER PROPERTY CARE	F/G 931630E48	2113:7	4
30	MO 002001 SC 980890	118.3 41 <b>4.</b> 7	26
to the second second			2
32 - 33	B 980582 B 980696	115.4 121.0	5 86
34	В 980954	#Z ⊩⊍ 119.0	33
commission decision	B 980416	119.0	28
36	MD 71-5	117.3	32 19
37	TX 00D1626	116.0	19 9
	177-000 1050	V.VIII	

LOCATION MEANS

### **HEADING DATE (Julian)**

## ENTRY MEANS ALL LOCATIONS

ASSESSED THE	en e	Fig. 1880 SP 1888 SETTLE TOO SEE THE SECOND	rank
	Coker 9663	117.6	21
2	AGS 2000	116.6	12
- 3	USG 3209	116:0	8
4	Pioneer 26R61	117.0	15
5	SC 960057	12112	- 36
6	G/F 931241E16	118.4	27
7	G/F 93052E42	114.7	i a
8	F/G 931470E62	115.6	7
9	# F/G 931238E17	116.7°	4 7 13
10	AR 910-9-1	117.0	14
.11	%NO:98-26143	1194	33
12	NC 99-13022	117.3	18
13	¥NG 98-24182	115.6	-6
14	VA 00W-526	118.0	24
15	VA 98W-335	/119.4	34
16	VAN98W-342	117.4	20
17	-VA98W-631****	1181-	25
18	LA 9330D11-1	114.9	4
19	LA 95600A22-1 //	1177	22
20	AW D99-5261	119.1	31
21	AW L96*9266-1		17
22	AW D99*5725	116.5	11
23	AVV M96 3978-4	31177	- 23
24	AR 93035-4-1	119.0	30
25	G/F 94261E7	1/6.3	10
26	G 96195	119.0	29
27	G 96226	F 4 117.0	. 1e
28	G 19844	121.4	37
-29	F/G 931630E48	1137	1
30	MO 002001	118.3	26
31	SC:980890	114.7	
32	B 980582	115.4	**************************************
33	B 980696	121 0	25
34	B 980954	119.0	28
TELLOGRAPHICAL CONTRACTOR OF THE PARTY OF TH	B 980416	1192	32
Contractor VINCALOR	MD 71-5	117.3	19
COSOTERATORISMOS AND A	TX 00D1626	116.0	. 9
<b>《公安教教》等于"</b> 图"	<b>《《中国》的《中国》的《中国》的《中国》的《中国》的《中国》的《中国》</b>		

**LOCATION MEANS** 

### **HEIGHT** (inches)

## ENTRY MEANS ALL LOCATIONS

		ALL LOOKITOIN	rank
1.	Coker 9663	39.0	2
2	AGS 2000	36.0	16
3 '	USG 3209	32.3	• 31
4	Pioneer 26R61	36.4	13
5	/SC-960057	38.0	- 5
6	G/F 931241E16	36.8	10
7	-G/F 93052E42	33.6	25
8	F/G 931470E62	31.9	32
9.	F/G 931233E17	36.5	12
10	AR 910-9-1	37.9	6
11	NC 98-26143	36.9	9
12	NC 99-13022	32.3	30
13	NC 98-24182	30.5	
14	VA 00W-526	31.4	33
15	VA 98W-335	30.6 30.6	35 36
16 17	VAN98W-342	33.5	26
THE RESERVE OF THE PERSON NAMED IN	VA98W-631 LA 9330D11-1	33.4	27
18 19	LA 9560CA22-1	38.1	Z.1
20	AW D99-5261	34.0	23
21	AW L96*9266-1	36.0	- 45
22	AW D99*5725	35.3	19
23	AW M96*3978-4	135.3	18
24	AR 93035-4-1	35.1	21
25	G/F 94261E7	33.9	24
26	G 96195	37.8	7
27	G 96226	35.1	20
28	G 19844	35.6	17
29	F/G-931630E48	34.6	- 22
30	MO 002001	36.5	11
31	SC 980890	38.6	3
32	B 980582	37.2	8
33	B 980696	36.2	14
34	B 980954	39.8	1
35	B 980416	33.2	28
36	MD 71-5	30.8	34
37	TX 00D1626	32:7	29

**LOCATION MEANS** 

### **LEAF RUST**

St. Paul
MN
Reactions produced by NA Race\*

1		MRDS	₽ <b>M</b> Mİ	I BBK	KDG I	CRGI	TNRJ	TLGJ	SCJD	Postulated Genes***
3  USG 3209 4  Pioneer 26R61					NDC3	CDG	3-3-3	3		2a, 9, 10, 11
4 Pioneer 26R61		;lc	;lc	;lc	;	i	;	;	3	11,.26.+
6	4 Pioneer 26R61	;	;lc	;lc	;		;		;lc	+
8 F/G 931470E62 ; 3 3 3 9,+  8 F/G 931470E62 ; 3 3 46 (c				,le	lG2		3-	3=;-	3	11,26,+
\$\frac{9}{10}\$  \text{F/G}\text{931238E17}\$  \text{3}  \text{10}\$  \text{10}\$  \text{10}\$  \text{11}\$  \text{10}\$  \text{98-13022}\$  \text{3}   \text{4}  \text{4}  \text{3}  \text{3}   \text{4}  \text{3}    \text{4}   \text{3}	7 G/F 93052E42	i Ó;	İċ		<u>.</u>	746	,IC		•	+ +
10 AR 910-9-1		;	;-3				3	3		9,+
12 NC 99-13022	10 AR 910-9-1	-		;-3	;2c	: (U:		:		* <del>*</del> +
13. NC 98-24182 14 VA 00W-526 15 VA 98W-335 16 VAN98W-342 17 VA98W-631 18 LA 9330D11-1 19 LA 9560CA221 20 AW D99-5261 3 3; i2 i i 3 17, + 21 AW L96-92664 22 AW D99-5725 1					3		-3		100	
15 VA 98W/335 16 VAN98W-342 17 VA98W-631 3 IC	13 NC 98#24182	,	•	1	3	,	3 3	3	•	
16 VAN98W-342				;-3	3	3-;	3	;-3	3	11,+
18 LA 9330D11-1 19 [JA:9560CA2221 20 AW D99-5261 3 ; ]; ] 21 AW L96*926641 22 AW D99*5725	16 VAN98W-342		;i	;	:		_			+
19 LA 9560CA22:1 20 AW D99-5261 3 ; 3;  2 ;   ; 3   17, + 21 AW L96*9266-1 22 AW D99*5725   ;  c ; 3 3 ;  2   ;  1, + 23 AW M96*3978-4    c    c    c    c    c    c    c		3	, j¢		i i je	ile 🤃		jc		10,17,+
21 AWVL96*926631			,		,	,		,		+
22 AW D99*5725 ;	The first and th	3		3;	;l2		1		3	17, +
23 AW M96*3978-4   lc    c    c    c    c    c    c	22 AW D99*5725	:1	;lc		3	3		:2	:	11.+
25 G/F 94261E7 3-3-3-3-4 26 G 96195 3-3-3-3-3-3-4 27 G 96226 3-3-3-3-3-3-3-3-3-3-3-4 28 G 19844 3-3-3-3-3-3-3-3-3-3-4 29 F/G 931630E48 30 MO 002001		je		:ic		123		Jic <u>2</u>	. (3)	11,26.+
27 G 96226 3 3 3 3 10 + 28 G 19844 ; ; ; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; 3-; ; ; ;	25 G/F 94261E7	,20	3		,-ა :3-	,IGZ	ა 3-, ≉-	3,10		9, + • •
28 G 19844 ; ; ; ; 3-; ; 3 ; 3 ; 3 ; 3 ; 4 ; 29 F/G 931639E48 ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;		3	-	3		, ,		3	3	+
29 F/G 931630E48 30 MO 002001 ; ;   c ; ; ; ;   c ; + 31 SC 980890 32 B 980582 ; ; ; 3 ; ;   c ; + 32 B 980696 3     c ;   c ; ; ;   c ; + 34 B 980954 ; ; ; ; ; ; ; ; ; + 35 B 980416				: :	3-:	:	3	-3	3	; IU; ± +
31. SC 980890 32. B 980582 33. B 980696 34. B 980954 35. B 980416 36. MD 71-5							;l¢			+
33 B 980696 3 (c ) Le 3 (c ) 4 34 B 980954 4 35 B 980416 4 36 MD 71-5		,	,IC					;IC		+
34 B 980954 35 B 980416 36 MD 71-5							3		;lc	9, 24, +
36 MD 71-5 +		3,	10 32 37 :		! ; IC	აქ-; :	: JC		a dedu	+
	35 B 980416	jć3	11.11							#
37. TX:00D1626 3 /11.26±	TO MAKE WITH THE PROPERTY OF THE PARTY OF TH	Ţ	<b>,</b>	•	; ilo	;	ie	;	;	+ 11 26 +

\*Single genes tested: = 1,2a,2c,3,3Ka,9,10,11,14a,16,17,18,24,26,30,B

\*\*Virulence formula:

MBDS=1,3,10,14a,17,B

PMML=1,2c,3,3Ka,9,26,30,B

LBBK=1,10,14a,18

KDGJ=2a,2c,3,10,11,14a,24

CBGJ=3,10,11,14a

TNRJ=1,2a,2c,3,3Ka,9,10,11,14a,24,30

TLGJ=1,2a,2c,3, 9,10,11,14a

SCJD=1,2a,2c,11,14a,17,26

<sup>\*\*\*+=</sup>Lr gene(s) present but unable to identify with these Lr virulence combinations

### **HESSIAN FLY**

			W. Lafayette IN	•	· - 1 - 6
	Biotype B	Biotype C	Biotype D	Biotype E	Biotype L
1 Coker 9663	12 - 2	12 - 3	10-5	7÷10°	.0-19
2 AGS 2000	0 - 16	1 - 17	0 - 18	8 - 11	2 - 16
3 USG 3209	17 - 2	0 - 23 %	0 - 19	·15=0	* 40 - 18
4 Pioneer 26R61	0 - 15	0 - 19	0 - 17	16 - 0	0 - 16
5 SC 960057	16-2	0 - 13	0 - 16	# ×184-10 ks	0-20-
6 G/F 931241E16	0 - 17	0 - 19	0 - 18	18 - 3	0 - 22
7 G/F 93052E42	10 = 14	4 - 13 0	0 - 18	¥	0 - 15
8 F/G 931470E62	3 - 15	6 - 17	4 - 18	0 - 19	0 - 18
9 F/G 93/1233E17	0 - 22	0 - 20	0,28	0.4/21	0 - 22
10 AR 910-9-1	0 - 19	0 - 18	0 - 19	0 - 20	0 - 20
11 NC 98 <sup>2</sup> 26143	0 - 16	21 - 2	0-22	, 0=20 #	- 40-19
12 NC 99-13022	0 - 17	0 - 14	0 - 15	0 - 16	0 - 12
13 NC 98-24182	¥0 = 13	0 - 23	0 - 23	15-6	*0 - 11
14 VA 00W-526	0 - 17	0 - 25	0 - 19	0 - 19	0 - 19
15 VA 98W-335	0 - 18	13 - 4	0 - 16	0/- 17-	20 - 19
16 VAN98W-342	0 - 18	3 - 16	0 - 19	0 - 16	0 - 21
17 VA98W-631	0 - 18	18 - 2 -	0 - 19	0=15	0-18
18 LA 9330D11-1	0 - 12	0 - 30	0 - 18	0 - 15	0 - 17
19 LA 9560CA22-4 20 AW D99-5261	0 - 16	5 - 10	2-17	15-2	0 - 18
21 AW L96*9266-1	0 - 16 0 - 18	0 - 21 0 - 23	0 - 19 0 - 18	0 - 22 17 - 3	0 - 23 0 - 22
22 AW D99*5725	0 - 16	0 - 23 0 - 25	0 - 10 s	0 - 22	0 - 22 0 - 16
23 AW M96*3978-4	0 - 16	0 - 23	0 - 21	0 - 22 0 - 24	0 - 16
24 AR 93035-4-1	0 - 16	0 - 25	0 - 17	5 - 18	0 - 19
25 G/F 94261E7	0 - 10 2 0 - 17	3-17	0 - 16	0 = 25	0-19
26 G 96195	8 - 4	0 - 21	5 - 10	20 - 1	0 - 19
27 G 96226	0 - 19	3-9	0 - 14	12 - 8	40-14
28 G 19844	11 - 5	1 - 19	0 - 24	3 - 22	0 - 21
29 F/G 931630E48	- 15 ·	0-20	0 = 21	42190	0 - 24
30 MO 002001	7 - 5	7 - 13	1 - 17	19 - 5	0 - 19
31 SC 980890	20 - 1	3 - 21	17 = 0	14-0	25 - 0
32 B 980582	0 - 19	0 - 19	0 - 21	0 - 16	0 - 22
33 B 980696	0 = 16	8 - 14	0 - 19	0:=20	+0 -17
34 B 980954	0 - 21	0 - 21	0 - 22	0 - 18	0 - 20
35 B 980416	5 - 6	13 - 2	11 - 9	1843	<b>40-18</b>
36 MD 71-5	0 - 17	2 - 20	0 - 12	0 - 16	0 - 19
37 TX 00D1626	18-0	0 - 24	0-25	25 - 0	0 - 23

# ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

REGION 1: INTERIOR (Bay, AR; Stuttgart, AR; Belle Mina, AL, Knoxville, TN; Warsaw, VA)

Belle M	lina, Al	L,; Knoxville, TN; Warsaw, VA)								
			MILLING	MILLING		BAKING			SOFT.	
LAB		STD=2502, AGS 2000	QUALIT	Υ	QUALIT	Υ	WT.		EQUIV	
NO.			SCORE		SCOR		SCOR	E	SCOR	
****		OTANDADD								
e money back to broke court, corn		STANDARD	85.9	A	62.4	C	79.7	В	63.1	C
2501	1	Coker 9663	75.3	В	59.4	. D	70.7	∵ B⊳	47.5	E.
2502		AGS 2000	85.9	Α	62.4	С	79.7	В	63.1	C
2503	DICHONORPHOLOGISTICS	USG 3209	70.2	βB	57.7	D	70.7	B.	56.5	Ď,
2504	and the second second	Pioneer 26R61	76.1	В	56.2	D	86.4	Α	52.7	D
2505	5	SC 960057	83,5	A	64.7	C	55.8	. D⊾	49.2	E
2506	6	G/F 931241E16	77.8	В	71.9	В	79.2	В	68.9	С
2507	7	G/F 93052E42	78.0	В.	73.4	B	74.6	• B	58.6	D
2508	8	F/G 931470E62	77.1	В	73.7	В	84.8	Α	54.8	D
2509	. 9	F/G 931233E17	75.7	B	-50.7	D	78.8	В	61.2	O
2510	10	AR 910-9-1	82.7	Α	66.6	С	66.7	С	58.0	D
2511	- 11	NC 98-26143	79.7	В	58.1	D	63.1	×Ĉ.	67.4	C
2512	12	NC 99-13022	75.3	В	52.9	D	72.8	В	53.6	D
2513	13	NC 98-24182	81.2	: A 3	67.9	C.	77.2	В	62.7	C
2514	14	VA 00W-526	79.8	В	65.4	C	76.0	В	44.0	E
2515	/15	VA 98W-335	75:4	® <b>B</b> ⊗	63.7	C.	75.8	В	68.2	C
2516	16	VAN98W-342	76.5	В	48.9	E	68.2	C	67.4	C
2517	17	VA98W-631	76.0	·B	56.4	D	60.1	Č	53.6	D
2518	18	LA 9330D11-1	78.5	В	55.9·	D	80.6	A	52.6	D
2519	19	LA 9560CA22-1	79.2	B	- 64.4	C	89.7	A	49.4	E
2520	20	AW D99-5261	74.5	В	78.2	В	63.5	C	73.3	В
2521	. 21	:/ AW L96*9266-1	76.9	В	55.9	Đ	72.9	В	65.6	C
2522	22	AW D99*5725	72.1	В	57.9	D	60.8	C	54.4	D
2523	23	AW:M96*3978-4	81.4	Α.	75.7	.B	71.5	В	66.1	ŧС,
2524	24	AR 93035-4-1	87.0	Α	28.2	F	76.9	В	27.4	F
2525	25	G/F 94261E7	77:4	В	69.2	C	70.7	В	62.4	O.
2526	26	G 96195	80.3	Α	75.4	В	64.5	C	65.4	C
2527	27	G 96226	73.6	В	70:6	В	75.2	В	51.3	D
2528	28	G 19844	79.9	В	73.7	В	84.8	A	59.8	D
2529	:29:	F/G 931630E48	74.1	В.	50.9	D	76.9	В	48.9	E
2530	30	MO 002001	74.2	В	74.2	В	75.2	В	58.2	D
2531	31	SC 980890	71.9	В	57.4	D	61.5	C	62.0	Č
2532	32	B 980582	77.1	В	65.7	C	83.2	A	54.9	D
2533	33	B 980696	86.5	A	39.9	F	85:2	A	40.6	E
2534	34	B 980954	71.6	В	75.7	В	75.6	В	58.2	D
2535	35	B 980416	76.7	В	69.9	C :	71.2	В	60.0	ESCONTRACTOR
2536	36	MD 71-5	75.9	В В	47.9	E	64.0	C	akasa kasa sasa sasa sasa sasa sasa sa	C
2537	37	TX 00D4626	73.9	В	47.9 57.2	D.	66.3	C	72.1	В
			UU	ייי	21.4	U.	୍ତ ଓ ଓ	9.	62.1	C

REPRODUCE LOCALLY. Include form number and edition date on all	I reproductions. F	ORM APPROVED - OMB No. 0581-0055
U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE  EXHIBIT E  STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).	
1 NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
University of Georgia Research	OR EXPERIMENTAL NUMBER	S. VARIETT IVAIVIE
Foundation, Inc. (UGARF) & Florida Agricultural Experiment Station (FAES)	GA931241E16	USG 3592
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (Include area code)
Boyd Graduate Studies Rsch Center	(706) 542–5944	(706)542–3837
6th Floor D.W. Brooks Drive	7. PVPO NUMBER	
Athens, GA 30602-7411	200400110	
8. Does the applicant own all rights to the variety? Mark an "X" in the		=
9. Is the applicant (individual or company) a U.S. national or a U.S. b	ased company? If no, give name of co	ountry. X YES NO
10. Is the applicant the original owner?	NO If no, please answer one	of the following:
a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?  YES  NO If no, give name of country		
b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?  YES  NO  If no, give name of country  11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):		
		·
PLEASE NOTE:		
Plant variety protection can only be afforded to the owners (not license	ees) who meet the following criteria:	
<ol> <li>If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.</li> </ol>		
<ol> <li>If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.</li> </ol>		
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.		
The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.		
According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.		
The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).		

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provide and employer.

#### Exhibit E

### 11. Additional Explanation of Ownership

**USG 3592** 

The variety for which plant variety protection is hereby sought is owned jointly by the University of Georgia Research Foundation, Inc. (UGARF) and the Florida Agricultural Experiment Stations, (FAES).

Ownership by UGARF in the variety for which plant variety protection is hereby sought is based on the Invention Administration Agreement of April 1, 1979, which was superseded by the Intellectual Property Administration Agreement of November 8, 1995, between UGARF and the Board of Regents of the University System of Georgia, in which the Board of Regents assigned to The University of Georgia Research Foundation, Inc. all rights in intellectual property developed or created by employees at The University of Georgia, one of the universities of the University System of Georgia. Rights of novel plant varieties developed at The University of Georgia, including 'USG 3592', are covered by said Administration Agreement. As employees of The University of Georgia, Jerry W. Johnson, Barry Cunfer, and G. David Buntin have assigned their rights in 'USG 3592' to UGARF.

Ron Barnett and Paul Pfahler are employees of the Florida Agricultural Experiment Stations, the University of Florida